

Work Order ID 151283***151283***

Page 1

Tuesday, September 20, 2016 11:31:58 AM

Item ID: D212-725-1-093

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Engine Deck Vent Fitting

Start Date: 9/20/2016 Start Qty: 5.00

5

Cust Item ID:

Required Date: 9/30/2016 Req'd Qty: 5.00

5

Customer:

Reference:

Approvals:

Process Plan:

SA

Date: SEP 20 2016

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D4229

A

100

0.00

100

Hardinge CNC LATHE SMALL

Hardinge

Memo

0.00

Hardinge CNC Lathe Small

1-TURN AS PER FOLIO Pa662 & DWG ,
FOLIO REV: AA
DWG REV: A
2-DEBURR AS REQUIRED

*5**0*

DAS

45

9-89

2016-9-27

110

0.00

110

QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

*5**0*

DAS

45

9-89

2016-9-27

120

0.00

120

QC8- Inspect parts - second check

QC

Memo

0.00

Quality Control

2016-9-30

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Work Order ID 151283

Tuesday, September 20, 2016 11:31:58 AM

151283

Page 2

Item ID: D212-725-1-093

Accept

N900040100

Setup Start

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Revision ID:

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Item Name: Engine Deck Vent Fitting

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5

Cust Item ID:

Required Date: 9/30/2016 Req'd Qty: 5.00

5

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

Identify as per dwg & Stock Location: **JHFD**

0.00

130

Packaging

Memo

0.00

S**SEP 30 2016****DAS
6
9-89**

Packaging

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.00

**DAS
21
9-8****OCT 03 2016**

Quality Control

**DAS
21
9-89****SEP 30 2016**

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
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Root Cause				FAULT CATEGORY			
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Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐
Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐
Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐
LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐
Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐
Past Expiry Date ☐	☐	Manufacturing Process	☐	OTHER : _____			
Misidentified ☐	☐	Past Due	☐				

Picklist Print

Tuesday, September 20, 2016 11:31:57 AM

Page 1

Work Order ID: 151283

151283

Parent Item: D212-725-1-093

D212-725-1-093

Parent Item Name: Engine Deck Vent Fitting

Start Date: 9/20/2016

Required Date: 9/30/2016

Start Qty: 5.00

Required Qty: 5.00

Comments: IPP Rev:A New Issue 07-01-05 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M303H1.000		Purchased		No		100	f	21.8000	0.25	1.315789			

M303H1 000

303 hex bar 1.00

Location

Loc Qty

Loc Code

MAT100

9.8

110213

12

m131479

9.8

2.01

DAS

45

9-89

2016-9-27

DQA: _____ Date: _____

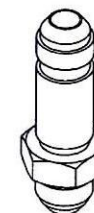
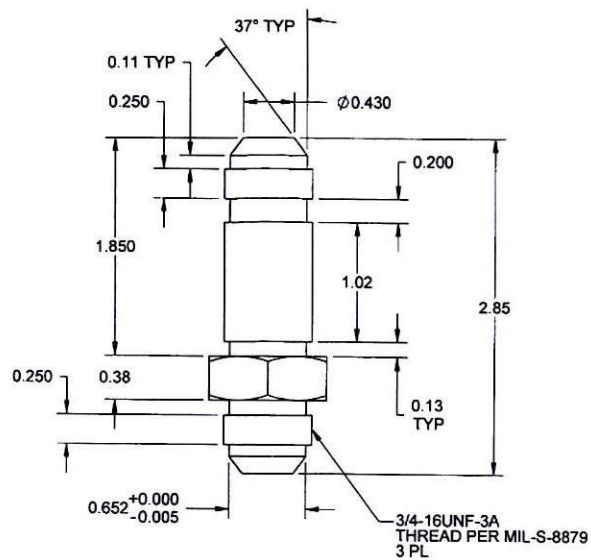


WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
				Completed By 					
				Lead hand / Supervisor Approval Verification 					
				QC / QA Coordinator Approval 					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : _____							



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 151283

SEP 20 2010
1609-20

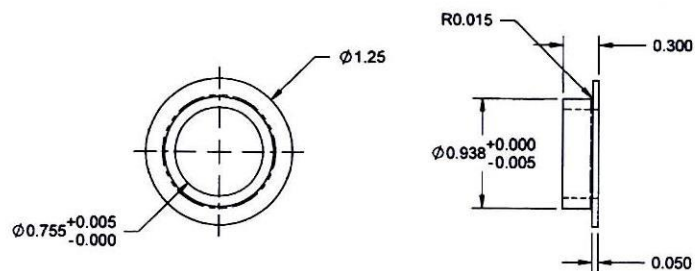
RELEASED
2011-08-25

D212-725-1-093 UNION

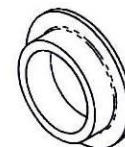
NOTES:

- 1) MATERIAL: AISI 303 STAINLESS STEEL HEX BAR
PER ASTM A582
REF DART SPEC. M303H
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.27 lbs

A NEW ISSUE		RF	11.02.24
REV.	DESCRIPTION	BY	DATE
DESIGN	DC	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4229	SHEET 1 OF 2
APPROVED		TITLE	SCALE
DE APPR.		UNION	NTS
DATE	11.02.24	COPYRIGHT © 2011 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



D212-725-1-105 BUSHING



RELEASED
2011-08-25

NOTES:

- 1) MATERIAL: AISI 303/304/316 STAINLESS STEEL ROUND BAR
PER ASTM A582/A276
REF DART SPEC. M303R OR M304R
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.029 lbs

DESIGN	DC	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO. D4229	REV. A
MFG. APPR.	<i>[Signature]</i>	SHEET 2 OF 2	
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	UNION	NTS
DATE	11.02.24	COPYRIGHT © 2011 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

DART AEROSPACE LTD ^{DAS}		Work Order: 151283
Description: Union ¹⁰		Part Number: D212-725-1-093
Inspection Dwg: <u>D212-725-1</u> ⁹⁻⁸⁹ <u>REV: A</u>		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
1.00	+/-0.030	0.995	✓		Caliper	JTC-01
Ø0.386	+0.006/-0.001	0.388	✓		"	"
R0.500	+/-0.010					
0.074 x 30°	+/-0.010 x +/-0.5°	0.070 x 30°	✓		Caliper	JTC-01
2.85	+/-0.030	2.851	✓		"	"
1.850	+/-0.010	1.848	✓		"	"
1.02	+/-0.030	0.991/1.00	✓		"	"
0.250	+/-0.010	0.250	✓		"	"
0.250	+/-0.010	0.242	✓		"	"
0.200	+/-0.010	0.200	✓		"	"
0.13	+/-0.030	0.15	✓		"	"
0.38	+/-0.030	0.38	✓		"	"
0.11	+/-0.030	0.105	✓		"	"
Ø0.652	+0.000/-0.005	0.6495	✓		micron	JTC-02
Ø0.430	+0.006/-0.001	0.430	✓		Caliper	JTC-01
37°	+/-0.5°	37°	✓		Angle	Shop
3/4-16 UNF-3A	N/A	NUT OK	✓		NUT	Shop
ΦMAX-min	0.750-0.740 ⁶	0.745 ⁶	✓		micron	JTC-02
over wire .04						
ΦMAX-min	0.775 ³ -0.771 ⁵	0.773	✓		"	"

DAS
45

Measured by: 9-89	Audited by: Jh	Prototype Approval: N/A
Date: 2016-9-27	Date: 16-9-30	Date: N/A

Rev	Date	Change	Revised by	Approved
A	07.09.06	New Issue	KJ/JLM	E